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NEWS AND TRENDS IN CITY DEVELOPMENT

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LAND DEVELOPMENT AND THE AUTOMOBILE

A great deal of study by highway engineers has been given to the characteristics of the automobile and individual driving habits on the design of highways, and certain standards based upon these characteristics have been developed and widely accepted. This applies particularly to major rural highway routes and more recently to the proposals for freeways entering the urban areas.

Much less attention appears to have been given by automotive engineers to the design of automobiles with relation to limitations of minor street and driveway design in residential areas and of the trends and limitations of parking garage facilities in central city areas.

THIS TYPE OF RESIDENTIAL DRIVE AND ROADWAY SECTION IS COMMON THROUGHOUT THE UNITED STATES.

Terminal Limitations

When the automobile driver leaves the street to park his car, certain limitations in the traveled surface appear which are not found elsewhere. In a residential area, a curb, apron, or surface drainage gutter must be negotiated. In rolling or hilly country, driveways leading to a parking space or garage often must be constructed with a considerable gradient. Parking in the central area of cities will increasingly be provided off the street, not only in open lots, but in multiple story garages where space

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Plan-itorial . . .

Central Business District Council Sessions

Continuing its study of practical solutions of the problems in our central areas, the Central Business District Council of the Urban Land Institute held an intensive three-day session in Louisville, Kentucky during the week of April 11 under the chairmanship of A. J. Stewart. Council members attending the session included: A. J. Stewart, Louisville; L. F. Eppich, Denver; Newton C. Farr, Chicago; Paul L. McCord, Indianapolis; Henry S. Miller, Dallas; M. C. Mumford, Chicago; Warren Morris, Cleveland; Richard J. Seltzer, Philadelphia; Walter S. Schmidt, Cincinnati; Foster Winter, Detroit.

Automobile parking continued to be a leading item on the Council's agenda with particular attention given to the analysis of experience thus far developed in cities which have been operating fringe parking and shuttle bus service. In the opinion of the Council, Louisville is in a particularly favorable position in this respect. It was found that parking areas adequate to care for the future anticipated needs of the Louisville area can be located within 2½ blocks of the heart of the retail district, at the same time leaving room for expansion of the district to meet any future need. Also under this subject the danger of improperly located facilities with relation to efficient retail operation was developed. Proposals which would require individual off-street parking facilities under zoning hold real danger in further encouraging decentralization by disproportionate increases in cost of construction and the tendency to destroy the continuity and compactness of retail areas. Trends in automobile design which are causing concern among garage owners and operators were also considered.

Urban freeway proposals through the central areas of the city were analyzed with particular reference to their effect on commercial decentralization. The failure in many areas to recognize that the problems of freeway location and characteristics are matters which go considerably beyond purely traffic considerations was emphasized.

Detailed attention was given to practical aspects of various taxing policies and methods used in urban areas and their effect on the central districts which have been bearing increasingly the brunt of the tax load. The recent adverse decision on the St. Louis income tax was analyzed and proposals advanced toward more realistic and scientific approach to the problem.

Practical methods for consolidating the governmental operation of urban areas in order to bring them into line with reality were discussed, and the need for cities to maintain current real property inventories was emphasized.

Urban redevelopment as a vital factor in preserving the well being and stability of the central area received detailed attention.

The third day of the session was devoted primarily to the problems of the Louisville area, and various detailed proposals in the city's development program were studied in collaboration with the Louisville Area Development Association which was host to the Council. Dr. K. P. Vinsel, Executive Director of the Association, outlined the problems facing Louisville and the steps which the Association in collaboration with the City Planning Commission, City Engineer, and other municipal departments, were taking in developing a positive planning approach. The Council was unanimous in its feeling that Louisville was to be congratulated in having an organization sponsored by the civic-minded businessmen of the community which had such an excellent record of accomplishment to its credit.

The conference closed with a luncheon sponsored by the Association at which the Council members met with over a hundred representative businessmen of Louisville and exchanged with them views on the future of the Louisville area.

The data and conclusions formulated by the Council will be available to the membership in the May issue of Urban Land.

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OFF-STREET PARKING

Creation of The Off-street Parking Committee of the Central Business District of Denver, Colorado is the result of cooperative action by the City of Denver and the Denver Chamber of Commerce. The Committee is designed to work closely with the City Planning Commission, three members of which have been appointed to the parking committee. An office has been opened and a manager and technical staff have been retained.

Miami, Florida, has recently enacted an ordinance requiring off-street parking and loading platforms to be incorporated into certain types of new buildings. Auditoriums, churches and theatres must provide one car space for each 10 seats; and commercial and business buildings one space for each 1,000 square feet of floor area in excess of 7500 square feet. Off-street loading space is also required for industrial, wholesale and storage buildings.

Plans are under way to inaugurate an off-street parking and shuttle bus service in Washington, D. C. The Capital Transit Company has recently announced it was undertaking a service which would tap the central shopping area from an initial parking lot which it is planned to increase to two in the near future. The lot will be operated by the Company. Details on the operation have not been made public.

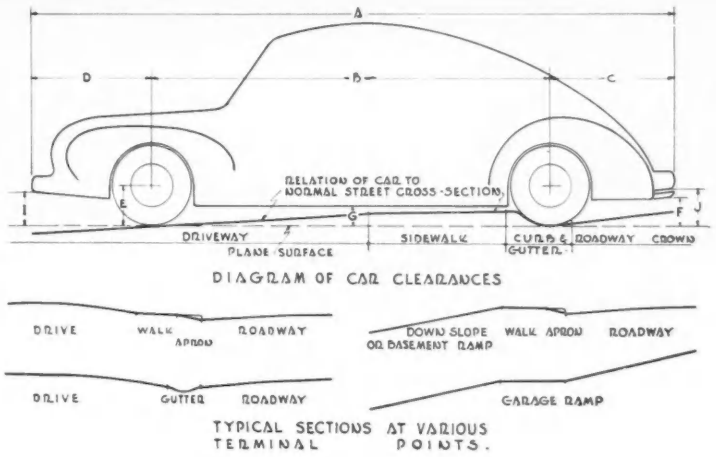


TABLE A

Critical Clearance Dimensions of Passenger Automobiles

NOTES: Dimensions have been converted into feet and nearest tenth to be directly comparable and easily used. Letters at head of each column refer to corresponding dimensions in the diagram.

Asterisk notes disparity between overall length and sum of B, C and D.

	A	B	C	D	E	F	G	H	I	J	K	L
			OVERHANG		GROUND CLEARANCE							
NAME	Overall Length (Feet)	Wheel Base (Feet)	Ctr. Rear Wheel to Rear Bumper (Feet)	Ctr. Front Wheel to Front Bumper (Feet)	Size of Wheel & Tire (Inches)	Ground to Exhaust (Inches)	Ground to Lowest Points (Inches)	Location of Lowest Point	Ground to Front Bumper (Inches)	Ground to Rear Bumper (Inches)	Turning Circle Average (Feet)	Overall Width (Feet)
1946 Chrysler—												
Crown Imperial—8 cyl.	19.6	12.1	3.8	3.6	7.50 x 15	9.5	7.0	Muffler	12.8	13.2	48.2	6.3
Imperial—8 cyl.	17.9	10.6	3.8	3.5	7.00 x 15	9.3	6.8	Muffler	12.8	13.2	41.6	6.3
Royal—6 cyl.	17.4	10.1	3.8	3.5	6.50 x 15	9.0	6.5	Muffler	12.7	13.0	40.7	6.3
Royal—6 cyl., 7 passenger	18.9	11.6	3.8	3.4	7.00 x 15	9.3	6.8	Muffler	12.7	13.0	45.0	6.3
Dèsoto	17.3	10.1	4.0	3.2	6.50 x 15	9.0	6.5	Muffler	12.5	13.5	40.5	6.3
Desoto 7 passenger	18.8	11.6	4.0	3.2	7.00 x 15	9.0	6.8	Muffler	12.5	13.5	45.0	6.3
Dodge	17.1	10.0	4.0	3.1	6.00 x 15	9.0	6.5	Muffler	13.3	13.3	40.2	6.3
Dodge 7 passenger	18.6	11.5	4.0	3.1	7.00 x 15	9.3	6.8	Muffler	13.3	13.3	45.0	6.3
Plymouth	16.4	9.8	3.8	2.8	6.00 x 16	9.0	6.5	Muffler	13.0	13.0	39.3	6.1
1946 Buick—"40"	17.3	10.1	4.2	3.0	6.50 x 16		6.0	Transverse Bracket	16.4	15.9	42.7	6.5
Buick—"50"	17.7	10.3	4.3	3.1	6.50 x 16		5.9	Transverse Bracket	16.1	16.8	44.2	6.6
Buick—"70"	18.1	10.8	4.3	3.0	7.00 x 15	6.1	6.1	Exhaust Pipe	16.7	16.1	45.6	6.6
Cadillac 60S	18.7	11.1	4.6	3.0	7.00 x 15		6.3	Rear Spring	16.1	15.3	48.3	6.7
Cadillac 61	17.8	10.5	4.4	2.9	7.00 x 15		6.6	Rear Spring	16.1	14.4	45.7	6.7
Cadillac 62	18.3	10.7	4.6	3.0	7.00 x 15		6.4	Rear Spring	16.1	15.3	52.8	6.7
Cadillac 75	18.9	11.3	4.7	2.9	7.50 x 16		5.8	Rear Spring	15.8	15.5	48.8	6.9
Chevrolet—St. Master	16.6	9.7	4.1	2.8	6.00 x 16		7.3	Rear Spring	16.3	15.8	42.3	6.1
Chevrolet—Flt. Master	16.6	9.7	4.1	2.8	6.00 x 16		7.4	Rear Spring	16.3	15.8	42.4	6.1
Oldsmobile—66	17.0	9.9	4.1	3.0	6.00 x 16		7.2	Rear Stabilizer Bracket	16.0	14.7	41.9	6.3
Oldsmobile—76	17.7	10.4	4.4	3.0	6.50 x 16		7.1	Frame X Member	15.9	15.8	42.6	6.3
Oldsmobile—70	17.7	10.4	4.4	3.0	6.50 x 16		6.9	Frame X Member	15.9	15.8	45.9	6.3
Oldsmobile—98	18.0	10.5	4.5	3.0	7.00 x 15		7.1	Frame X Member	16.0	15.9	46.0	6.5
Pontiac—25	17.0	9.9	4.2	3.0	6.00 x 16		7.7	Frame Center	15.2	15.0	42.6	6.3
Pontiac—26	17.5	10.2	4.4	3.0	6.50 x 16		7.3	Frame Center	15.1	15.9	43.7	6.4
Pontiac—27	17.0	9.9	4.2	3.0	6.00 x 16		7.7	Frame Center	15.2	15.0	42.6	6.3
Pontiac—28	17.5	10.2	4.3	3.0	6.50 x 16		6.3	Splash Pan	14.6	16.2	41.7	6.4
1946 Lincoln	18.2	10.4	4.5	3.2	7.00 x 15	9.4	6.8	Center X Member	9.5	8.4	44.5	6.5
Mercury	16.9	9.8	4.0	3.0	6.50 x 16	8.8	7.5	Center of Axle Beam	11.2	12.1	41.0	6.1
*Ford	16.5	9.5	4.2	3.0	6.00 x 16	10.3	7.5	Center of Axle I Beam	12.3	13.5	41.0	6.1
1947 Studebaker—												
14A—Long Commander	17.4	10.3	3.8	3.3	6.50 x 15	10.9	6.1	Muffler Bracket	11.1	12.0	42.9	5.8
14A—Commander	17.0	9.9	3.8	3.3	6.50 x 15	10.9	6.1	Muffler Bracket	11.1	12.0	42.0	5.8
6G—Champion	16.0	9.3	3.8	2.9	5.50 x 15	10.0	5.9	Exhaust Pipe Bracket	12.7	10.4	42.9	5.8
1946 Nash—												
*"Ambassador 6"	17.4	10.1	4.0	2.8	5.00 x 15	8.0	8.0 Exhaust Pipe	32" Back Front Wheel	14.3	18.0	38.0	6.3
*Nash "600"	16.6	9.3	4.0	2.8	4.00 x 16	10.5	9.0 Muffler	46" Back Front Wheel	14.5	17.0	41.0	6.3
1946 Packard—2100-1-11	17.4	10.0	4.2	3.2	6.50 x 15	9.0	6.7	Muffler	11.0	10.8	42.0	6.3
2103-6	18.0	10.6	4.2	3.2	7.00 x 15	9.2	6.9	Muffler	11.5	11.3	44.0	6.3
2126	19.7	12.3	4.2	3.2	7.50 x 16						52.0	6.3
1947—Kaiser and Frazer	16.9	10.3	3.8	2.8	6.50 x 15	12.8	7.1	Rear Axle	12.5	13.8	44.0	6.1

From data furnished by the Chrysler, General Motors, Ford, Nash, Studebaker, Packard, and Kaiser-Frazer Corporations.

THIS CAR HAS RECOVERED FROM THE SPRING SAG WHICH CAUSED DRAG OF THE REAR END.

LAND DEVELOPMENT AND THE AUTOMOBILE

(Continued from Page 1)

is at a premium. The necessity to conserve space, both horizontally and vertically, requires that the maximum economy be used both in berthing space and in ramps and lanes providing circulation.

It is neither desirable nor practical to design these facilities for high speed operation for here other considerations become increasingly predominant.

Recent Car Design

Recent trends in automobile design have been toward longer, wider, and lower cars which reflect the streamlining of super highway design, but not the technical limitations of terminal facilities. This is causing great concern among land developers and parking garage owners and operators.

The critical points of clearance which are causing the trouble are:

1. Front and rear overhang from wheel centerline.
2. Ground clearance of these extremities, including the exhaust pipe.
3. Ground clearance of under portion of car between front and rear wheels.
4. Overall width.

The accompanying table and diagram gives the critical dimensions of most of the popular makes.

Certain models have developed long car overhangs, particularly in the rear, which, combined with a low ground clearance, make the possibility of rear drag very great. This is critical in such cross sections as are shown in the diagram. Where long wheel base is combined with low ground clearance between wheels, trouble is caused on sections such as those illustrated.

Check Your Car Clearances

With the information given, it is a simple matter for the developer and operator to determine within narrow limits the models which may cause difficulty in his particular project in the following manner:

(a) Obtain a cross section drawing of your roadway, curb and drive plotted to true vertical and horizontal scales at a scale of one inch equals one foot.

(b) Make an outline drawing on heavy paper of the car at the same scale, similar to that shown in the diagram, using the proper dimensions given in the Table.

(c) Cut out the car, forming a template.

(d) Run the template over your cross section in various positions and the amount of roadway clearance or lack of it will be readily evident.

Tests of this type reveal that in some models differences in grades from a level to a slope of over 14 percent will cause trouble. Also where meeting grades total over 14 percent, difficulty will be experienced. For instance, if a change from an upgrade of, say, 6 percent to a down grade of more than 8 percent is involved, trouble is encountered with center clearance. A reverse grade of the same amount gives trouble with overhang. Further allowance must also be made for additional car loading, low tire inflation, and bounce where the grade change is abrupt.

Our information on this subject leads us to the conclusion that automobile manufacturers should consider grade breaks up to 20 percent in order to be safe as far as parking garages in most cities are concerned.

The Parking Garage

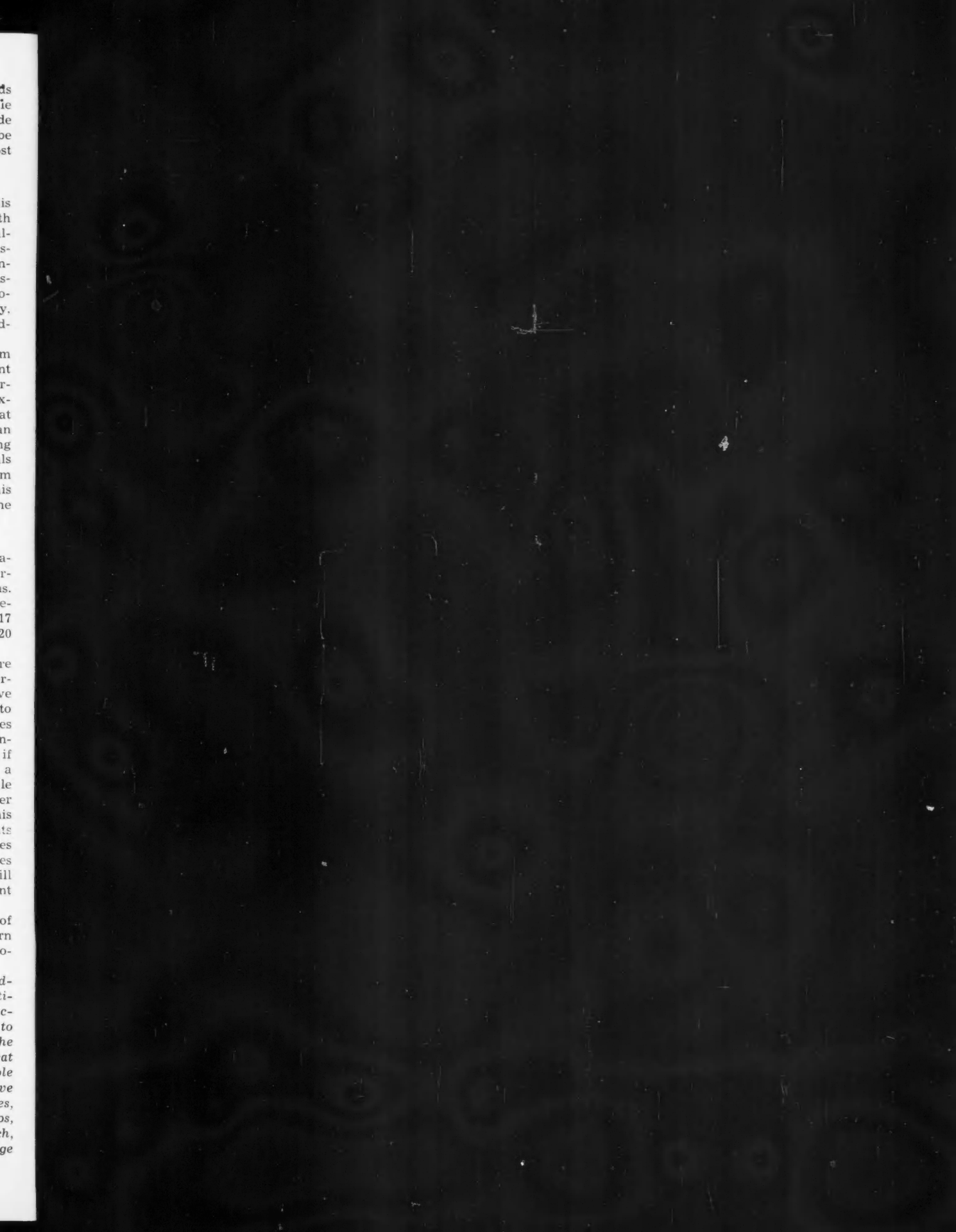
Another important aspect of this problem is the increase in overall width which is reflected in increasing difficulties of parking garage operation especially where column spacing is involved. Mr. Walter T. Vanaman, Assistant Director of the District of Columbia Motor Vehicle Parking Agency, makes the following comments regarding the berthing problem:

"We have had complaints from garage operators regarding the present design trend toward wider cars, narrower running boards and fragile exterior ornamentation. Considering that few parking garages allow more than 7½ feet for the width of one parking stall and that the parking manuals recommend this width, it would seem that cars should be designed to fit this space and still allow room for the driver to emerge from the car."

Car Stalls

Another important aspect is the relation of overall length and front overhang to the length of parking berths. Many parking areas have been designed for car lengths not exceeding 17 feet with central aisle from 17 to 20 feet in width.

It should be emphasized that there are definite limits within which terminal facilities such as discussed above can go in adapting themselves to changing car design. Such facilities are expensive to construct and once installed are fixed, difficult and costly if not impossible to change, and have a relatively long life. The automobile manufacturer should seriously consider the fact that the satisfactory use of his particular car is related directly to its ability to use these terminal facilities and that without question if he does not consider these factors, his cars will be seriously damaged with consequent dissatisfaction by the car owner.

The Community Builders' Council of the Institute has indicated its concern with the problem in the following resolution:

RESOLVED *that the Community Builders Council of the Urban Land Institute urges the automobile manufacturers to give greater consideration to the design of future car models as the present models, because of their great overhang and low clearance, are unable in many instances to enter or leave without damage, residential drives, commercial garages with floor ramps, and streets with heavy grades, which, in most cases, are not subject to change without prohibitive cost.* M. S. W.